

REMARKS

This Amendment amends claim 1 and cancels claim 4. The subject matter of cancelled claim 4 has been incorporated into independent claim 1. Independent claim 1 has been amended to further define the invention over the cited prior art. Support for all amendments may be found in the application as originally filed. No new matter has been added. Claims 1, 5-7 and 9-10 are currently pending in this application.

Additionally, the specification has been amended to include language that was inadvertently omitted in the Amendment filed on April 28, 2003. Support for this language can be found in the application as originally filed.

Claims 1, 4-7 and 9 stand rejected under 35 U.S.C. §103(a) for obviousness over Applicants' admitted prior art (hereinafter "AAPA") in view of U.S. Patent No. 6,009,913 to Kojima et al. (hereinafter "Kojima").

Amended independent claim 1 defines a fuel tank having improved durability and corrosion resistance properties made from an Al-coated steel sheet. The steel sheet has an alkali-soluble protective resin film formed directly on a surface of the Al-coated steel sheet and is removable from the surface of the Al-coated steel sheet after press-forming to a final shape. The resin film has an acid value of 40-90 and contains carboxyl groups. The resin film also has a substitution ratio of 1-50% hydrogen atoms with alkali metal in the carboxyl groups and is soluble in an alkali liquid of pH 9.0 or higher. Claim 1 is amended to include that feature, namely, "resin film... containing carboxyl groups, 1-50% hydrogen atoms in the carboxyl groups being substituted with alkali metal...". Substitution of hydrogen atoms by alkali metal is not taught or suggested by the prior art of record as detailed below.

AAPA (JP 6-306637, JP 9-053166), as discussed on page 2, line 19 to page 3, line 3 of the application, discloses an Al-coated steel sheet to which an organic resin film dispersing metal powder is applied. An oxide film is formed on the surface of the Al plating layer to protect the Al-coated steel sheet from an organic acid.

Kojima discloses a lubricant surface-treated steel pipe for hydroforming use. The lubricant is a resin coating that is soluble in an alkali aqueous solution, which may or may not be removed from the hydroformed product.

AAPA, whether considered alone or in combination, fails to disclose or suggest a removable alkali-soluble resin film having a substitution ratio of 1-50% hydrogen atoms in carboxyl groups with alkali metal. The alkali soluble resin film of the present claimed invention is a protective film for providing at least anti-scratching properties and is removable from the surface of an Al-coated sheet after press-forming to a final shape. The soluble resin film of the present claimed invention further has an acid value of 40-90, carboxyl groups, a substitution ratio of 1-50% hydrogen atoms in the carboxyl groups with alkali metal and is soluble in an alkali liquid of pH 9.0 or higher. AAPA, on the other hand, teaches an Al-coated steel having an organic coating present for providing corrosion resistance. As such, AAPA does not teach or suggest a removable alkali-soluble resin film having a substitution ratio of 1-50% hydrogen atoms in the carboxyl groups with alkali metal as recited in amended independent claim 1.

Moreover, Kojima fails to add any teachings to the deficiencies of AAPA to render the present claims obvious. In particular, Kojima does not teach or suggest (a removable alkali soluble resin film having a substitution ratio of 1-50% hydrogen atoms in the carboxyl groups of the resin with alkali metal.) Kojima merely discloses a resin coating that may be of vinyl resin or carboxyl-group-containing vinyl copolymers and may be removable. Kojima, however, does not teach or suggest substituting the hydrogen atoms in a carboxyl group by alkali metal at a ratio of 1-50%. Substitution of the hydrogen atoms of the carboxyl groups in the resin of the present claimed invention imparts hygroscopicity to the resin film so as to dissolve the resin film. As further described on page 7, lines 13-27, a substitution ratio of 1-50% of hydrogen atoms with alkali metal allows for effective dissolution of a resin film by an alkali liquid having a pH of 9.0 or higher in a minimal amount of time. Thus, Kojima clearly fails to teach or suggest a substitution ratio of 1-50% of hydrogen atoms in the carboxyl groups with alkali metal. ✓

Absorbs moisture

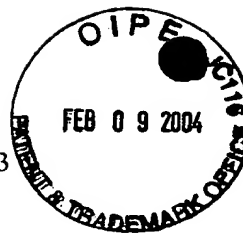
Claims 5-7 and 9 depend from and add further limitations to amended independent claim 1 and are deemed to be patentable for the reasons discussed previously in connection with amended independent claim 1. Reconsideration of the rejection of claims 5-7 and 9 is respectfully requested.

Claim 10 stands rejected under 35 U.S.C. §103(a) for obviousness over AAPA in view of Kojima and further in view of Japanese Patent No. 410265967 to Teruaki et al. (hereinafter "Teruaki").

Teruaki discloses the formation of a chromate-containing resin film on a surface of an Al-plating layer. The film is located on one side or both sides of a hot dip Al-coated steel sheet. Teruaki discloses a film containing 2-13 wt.% Si.

Teruaki does not cure the deficiencies of AAPA or Kojima with respect to amended independent claim 1. In particular, Teruaki does not teach or suggest a removable alkali-soluble resin film, let alone a removable alkali resin film containing carboxyl groups with the resin film having a substitution ratio of 1-50% hydrogen atoms in the carboxyl groups with alkali metal. Moreover, Teruaki does not teach an alkali-soluble resin film as in dependent claim 10. Teruaki discloses 2-13 wt.% Si and does not teach or suggest 1-30 mass % powdery silica as in dependent claim 10. Therefore, clearly since Teruaki does not render amended independent claim 1 obvious, claim 10, which depends from claim 1, cannot be deemed obvious. Accordingly, Applicants respectfully request reconsideration of the rejection of claim 10.

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In view of the foregoing amendments and remarks, claims 1, 5-7 and 9-10 are believed to be in condition for allowance. Reconsideration of the Examiner's rejections and allowance of claims 1, 5-7 and 9-10 are respectfully requested.

Respectfully submitted,

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